6-3-1988

Public Land Livestock Grazing, Water Quality and Riparian Ecosystems: The Evolving Legal and Technical Context

Richard H. Braun

Richard H. Braun, *Public Land Livestock Grazing, Water Quality and Riparian Ecosystems: The Evolving Legal and Technical Context*, *in* WATER QUALITY CONTROL: INTEGRATING BENEFICIAL USE AND ENVIRONMENTAL PROTECTION (Natural Res. Law Ctr., Univ. of Colo. Sch. of Law 1988).

Public Land Livestock Grazing, Water Quality and Riparian Ecosystems: The Evolving Legal and Technical Context

by

Richard H. Braun
Stoll, Stoll, Berne, Fischer and Lokting P.C.
Portland , Oregon

for

University of Colorado School of Law
Ninth Annual Summer Program

I. The resource.

A. Western expansion of the United States and competition with other nations for the Pacific northwest caused dramatic changes in rangeland ecology. There were three principal causes of this change.

1. Removal of beaver.

2. Suppression of wildfire.

3. Introduction of unregulated livestock grazing.

B. The combined effects of the above influences were severe.[1]

1. Expansion of upland phreatophytes such as juniper.

2. Destruction of riparian vegetative communities.

a. Loss of streambank stabilization.

b. Loss of streambank water retention ability.

c. Erosional downcutting of streambed channels with concurrent lowering of water tables.

d. Transport of vast amounts of sediment downstream.

C. A case study: Camp Creek near Prineville, Oregon.

In 1875 the Oregon Surveyor General described the Camp Creek watershed as an "ungullied meadow" with several marshes and and abundance of bunchgrasses on the uplands. Thirty years later a U.S. Geological Survey report stated that Camp Creek ran thorugh a vertical walled trench about 25 feet deep. Camp Creek continues to suffer erosion and water quality problems. The once perennial creek runs dry in late summer and is unsuitable as fish habitat. Erosion is so severe that a 531 acrefoot reservoir created in 1953 was completely filled with sediment by 1970.

---

[1] See generally, Parker et. al., Erosional Downcutting in Lower Order Riparian Ecosystems: Have Historical Changes Been Caused by Removal of Beaver? reprinted in USDA Forest Service, Riparian Ecosystems and Their Management; Reconciling Conflicting Uses, USDAFS Technical Report RM-120 (1985)(Herein "Forest Service Tech. Rep.") See also, Platts and Raleigh, Impacts of Grazing on Wetlands and Riparian Habitat, reprinted in National Research Council/National Academy of Sciences, Developing Strategies for Rangeland Management, (Westview Press 1984) (Herein "NRC/NAS Report")

Camp Creek is not atypical of many, if not all, smaller order western watersheds.

Loss of the integrity of thousands of watershed systems in the West has caused economic and ecological losses.

1. Water flow regulation is lost. Streams are mere conduits for spring freshets and snowmelt and there is little or no storage capacity in the watershed for slow release of water in late summer months. This increases the need for structural storage projects such as dams and impoundments. Those projects have their own problems including cost.

2. Erosion and lowered water tables accelerate the process of "desertification" leaving land adjoining streams permanently unproductive. [2] Erosion is a problem that travels downstream adversely affecting water quality and in some cases requiring dredging.

3. Streams that go dry in summer cannot support the macroinvertebrate communities necessary to supply a fish population with aquatic based food. Since 90% of a cold water fish diet is aquatic macroinvertebrate based these streams cannot have viable fish populations.

See generally, Braun, Emerging Limits on Federal Land Management Discretion: Livestock, Riparian Ecosystems, and Clean Water Law, 17 Env. L. 43 (1987)

D. Restoring the resource.

See attached materials, Elmore and Beschta, Riparian Areas: Perceptions in Management, 9 Rangelands 260 (1987).

Experiments and demonstration projects show that degraded watershed have an astonishing capacity regenerate their productive capacity. The primary requirement for restoring watersheds is rest from domestic livestock grazing. Camp Creek is instructive. In 1965 Camp Creek was in the condition noted above, a deeply trenched creek that went dry in summer. Only 17 plant species were present in the riparian zone.

Fall 1965: One mile of Camp Creek is fenced to exclude livestock. Seeded that stretch of riparian zone with tall wheatgrass and sweet clover. Later, willow cuttings and Russian olive seedlings were introduced.

1977: Streambed aggredation in the exclosure was observable. 45 plant species were established within the exclosure. During the 1977-78 draught, when Camp Creek went dry, there was constant

---

[2] Congress declared in 1978 that the western range was at "high risk" of desertification. See Public Rangeland Improvement Act of 1978, 43 U.S.C. § 1901(a)(3).

surface flow in the exclusure.

1985: Over 100 plant species identified within the exclosure. Stream is perennial. Water quality is improving.

II. The legal context for rangeland watershed restoration.

A. Land management statutes.

Federal land management agencies have extremely broad substantive authority over the lands they administer. Unquestionably the Forest Service and the Bureau of Land Management have sufficient authority to engage in systematic riparian and aquatic ecosystem restoration. However, the land management statutes do not appear to impose an affirmative enforceable duty on those agencies to do so. See e.g., Natural Resources Defense Council v. Hodel, 819 F.2d 927 (9th Cir. 1987).

1. BLM, FLPMA and Areas of Critical Environmental Concern.

The Federal Land Management Policy Act requires the BLM to develop land use plans for all land under BLM administration. 43 U.S.C. § 1712(a). Among the enumerated criteria BLM must employ in developing such plans is the requirement that the agency "give priority to the designation and protection of areas of critical environmental concern". 43 U.S.C. § 1712(c)(3).

"Areas of critical environmental concern" are defined by FLPMA as areas of the public lands "where special management attention is required...to protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resouurces, or other natural systems or processes, or to protect life and safety from natural hazards." 43 U.S.C. § 1702(a). It is important to note that the definition does not include the word "restore" and it has not been BLM's policy to use ACEC designation for the purpose of restoring degraded natural ecosystems such as riparian zones. See, Callison, Areas of Critical Environmental Concern on the Public Lands Part II: Record of Performance by the Bureau of Land Management (The Public Lands Institute, 1986) See also, Braun supra at note 53.

B. Federal Water Pollution Contral Act. (Clean Water Act)

The Clean Water Act 33 U.S.C. § 1251 et. seq., appears to impose an affirmative duty to federal land management agencies to cease permitting any activity on federal land that causes violation of state water quality standards or prevents attainment of those standards. This would appear to include cessation of permitting livestock grazing in streams where the record shows that with rest a stream could eventually meet water quality standards.

1. The easy explanation.

Section 313 of the CWA, 33 U.S.C. § 1323 binds federal agencies to comply with all state and federal law, both

substantive and procedural "respecting the control and abatement of water pollution in the same manner, and to the same extent as any non-governmental agency..." id. The section also waives soveriegn immunity for the purpose of enforcing the water pollution control laws.

The CWA also requires the states to adopt water quality standards for both interstate and intrastate waters. 33 U.S.C. § 1313. Those water quality standards (WQS) must be "such as to protect the public health or welfare, enhance the quality of water and serve the purposes of this chapter." id.[3] Very few western rangeland streams are currently meeting water quality standards because of historic degradation as outlined above. Thus, federal land management agencies may be violating the CWA by allowing livestock grazing in those streams that do not meet WQS. Injunctive relief is available to prevent violation of the CWA. See Northwest Indian Cemetary Protective Association v. Peterson, 795 F.2d 688 (9th Cir. 1986), see also, Oregon Natural Resources Council v. U.S. Forest Service, 834 F.2d 842 (9th Cir. 1987)

2. Problems with the easy explanation.

a. Can a plaintiff prove a causal connection between continued livestock grazing and failure to meet WQS? Can a plaintiff do this for a sufficient number of streams to actually influence policy?

b. Under EPA regulations respecting state promulgation of WQS a WQS must be "attainable". EPA says that a standard is attainable if it can be met with through the use of "cost effective and reasonable" Best Management Practices. Can a BMP be simple directive that livestock shall not be allowed in streams that do not meet WQS? Is the standard attainable if the only way to attain it is to disallow a use of the stream? See 40 CFR § 131.10 (d).

c. Must state WQS be judicially enforceable? If they are not does the duty to restore riparian systems exist?

3. Whose water is it?

A major function of healthy watersheds is the storage and slow release of water. The storage function of many watershed/riparian systems was destroyed before the turn of the century. If the federal government now begins to restore those systems and they store water, downstream seniors may not get the water they expect when they expect it. It is possible that in during restoration of watershed/riparian systems some water that

---

[3] One of the express purposes of the CWA is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." 33 U.S.C. § 1251

previously flowed downstream will simply sit in the riparian sponge until sufficient quantities have accumulated to begin flowing. What are the legal consequences during the time the "sponge is filling", especially when the sponge is federal public land. See, Skinner et. al., Reclamation of Riparian Zones and Water Law: First in Time, First in Right, reprinted in Forest Service Tech. Rep. supra note 1 at 374.

III. The technical and cultural context for watershed/riparian restoration.

A. If all these benefits are available why are there no major federal programs for watershed/riparian restoration?

1. Benefits cannot be easily quantified.

a. Water resource benefits are difficult to predict. How much will late summer flows be increased? Do watersheds and geological factors differ so widely that no single model will allow even a rough prediction of benefits? Is the same true of erosion?

2. Rates of recovery are very slow in economic terms.

b. The major constituency skeptical of programmatic riparian zone restoration is the livestock grazing industry. That industry has real economic concerns in the near and not too distant future. Substantial benefits to watersheds through livestock exclusion may not show up for decades. Why should a rancher incur costs when the benefits to him (principally in increased AUM production) might not be available for 25 years?

3. Costs are substantial.

4. There is the perception that the current condition of western watersheds is "the way its always been". Since most damage to streams occured before 1900 there are few persons alive today who recall the original state of those watersheds.

5. Mixed public and private land.

IV. Conclusion

Livestock grazing in the semi-arid West, particularly before it was regulated in 1934 caused dramatic and adverse changes to western watershed dynamics. Experimental evidence indicates that the damage done over a century ago can be reversed. In fact the evidence gathered at Camp Creek seems miraculous. The benefits of watershed restoration, thought difficult to quantify are substantial-reduced erosion, raised water tables, more productive range land, restored fisheries, and perennial water flow.

Reading and Source Materials

The definitive work on public rangeland management law is a series of five law review articles by Professor George Coggins. With the general title of The Law of Public Rangeland Management, they can be found at 12 Env.L. 535 (1982), 13 Env. L. 1 (1982), 13 Env. L 295 (1982), 14 Env. L. 1 (1983), and 14 Env. L. 497 (1984)

For a fuller discussion of the subject of these materials see Braun, Emerging Limits on Federal Land Management Discretion: Livestock, Riparian Ecosystems, and Clean Water Law, 17 Env. L. 43 (1987)

A compilation of papers on riparian ecosystems is U.S.D.A. Forest Service, Riparian Ecosystems and Their Management: Reconciling Conflicting Uses, (U.S.D.A.F.S. General Techical Report RM-120 1985)

Another massive collection of technical papers on rangeland management is National Research Council/National Academy of Sciences, Developing Strategies for Rangeland Management, (Westview Press 1984)

The major work on Forest Service law is Wilkinson and Anderson, Land and Resource Planning in the National Forests, 64 Or. L. Rev. 1 (1985)

The United States General Accounting Office published a report on restoring degraded riparian areas on western rangelands. That work is not publicly available at this writing but will be made available June 1, 1988.